CLAIMS

1. A monitoring device comprising a supporting member (9), a light emitter (5), a receiver (6) for the light of the source, characterized in that it further comprises an arm (8) with two opposite ends on which the source (5) and the receiver (6) are mounted, and a double and adjustable joint (13, 14) through which the arm is mounted on the support, the double joint comprising two axes of rotation (y, z) perpendicular to each other and to a main path (x) of the light between the emitter and the receiver.

2. The monitoring device according to claim 1, characterized in that it comprises a support (12) for a tool (4) carrying out an operation monitored by the device, on the supporting member (9).

3. The monitoring device according to claim 1, characterized in that the arm is curved between the ends.

4. The monitoring device according to claim 1, characterized in that the emitter and the receiver are provided with right-angle reflecting devices (20, 21, 26, 27) for light and positioned parallel to each other and perpendicularly to the main path (7) of the light.

5. The monitoring device according to claim 1, characterized in that the light is monochromatic, and the receiver comprises a filter (30) transparent to the light and opaque to other optical wavelengths, a converging lens (25) and pinhole (28) placed at a focus of the light created by the lens.

6. The monitoring device according to claim 1, characterized in that the light emitter is a light-emitting diode.

7. A method for monitoring a scene performed with the device according to claim 1, characterized in that it consists of placing the device so that the main path (x) of the light is tangent to the scene to be monitored and of adjusting the arm in orientation by adjustments of the double joint.

8. The monitoring method according to claim 7, characterized in that it is applied to a circular junction (1) notably in relief, of aligned tubes (2, 3), the tubes being orientated parallel to a first (y) of the axes of rotation.

9. The monitoring method according to claim 8, characterized in that the tubes are rotary, and the arm is subject to an oscillatory periodic rotation at least around the first of the axes of rotation.

10. The monitoring device according to claim 2, characterized in that the arm is curved between the ends.

11. The monitoring device according to claim 2, characterized in that the emitter and the receiver are provided with right-angle reflecting devices (20, 21, 26, 27) for light and positioned parallel to each other and perpendicularly to the main path (7) of the light.

12. The monitoring device according to claim 3, characterized in that the emitter and the receiver are provided with right-angle reflecting devices (20, 21, 26, 27) for light and positioned parallel to each other and perpendicularly to the main path (7) of the light.

13. The monitoring device according to claim 2, characterized in that the light is monochromatic, and the receiver comprises a filter (30) transparent to the light and opaque to other optical wavelengths, a converging lens (25) and pinhole (28) placed at a focus of the light created by the lens.

14. The monitoring device according to claim 3, characterized in that the light is monochromatic, and the receiver comprises a filter (30) transparent to the light and opaque to other optical wavelengths, a converging lens (25) and pinhole (28) placed at a focus of the light created by the lens.

15. The monitoring device according to claim 4, characterized in that the light is monochromatic, and the receiver comprises a filter (30) transparent to the light and opaque to other optical wavelengths, a converging lens (25) and pinhole (28) placed at a focus of the light created by the lens.

16. The monitoring device according to claim 2, characterized in that the light emitter is a light-emitting diode.

17. The monitoring device according to claim 3, characterized in that the light emitter is a light-emitting diode.

18. The monitoring device according to claim 4, characterized in that the light emitter is a light-emitting diode.

19. A method for monitoring a scene performed with the device according to claim 2, characterized in that it consists of placing the device so that the main path (x) of the light is tangent to the scene to be monitored and of adjusting the arm in orientation by adjustments of the double joint.

20. A method for monitoring a scene performed with the device according to claim 3, characterized in that it consists of placing the device so that the main path (x) of the light is tangent to the scene to be monitored and of adjusting the arm in orientation by adjustments of the double joint.

21. A method for monitoring a scene performed with the device according to claim 4, characterized in that it consists of placing the device so that the main path (x) of the light is tangent to the scene to be monitored and of adjusting the arm in orientation by adjustments of the double joint.

22. A method for monitoring a scene performed with the device according to claim 5, characterized in that it consists of placing the device so that the main path (x) of the light is tangent to the scene to be monitored and of adjusting the arm in orientation by adjustments of the double joint.

23. A method for monitoring a scene performed with the device according to claim 6, characterized in that it consists of placing the device so that the main path (x) of the light.is tangent to the scene to be monitored and of adjusting the arm in orientation by adjustments of the double joint.